

Student: _____
Date: _____

Instructor: Deb Wertz
Course: MAP102 MASTER

Assignment: Homework #8

1. Use the quotient rule for exponents to simplify.

$$\frac{y^{17}}{y^4}$$

$$\frac{y^{17}}{y^4} = \underline{\hspace{2cm}}$$

(Type your answer using exponential notation. Use positive exponents only.)

2. Use the quotient rule to simplify.

$$-\frac{12z^{12}}{6z^9}$$

$$-\frac{12z^{12}}{6z^9} = \underline{\hspace{2cm}}$$

(Type your answer using exponential notation.)

3. Use the quotient rule to simplify.

$$\frac{x^6 y^7}{x^2 y^7}$$

$$\frac{x^6 y^7}{x^2 y^7} = \underline{\hspace{2cm}}$$

(Type your answer using exponential notation.)

4. Simplify. Use positive exponents for any variables.

$$\frac{x^9}{x^{13}}$$

$$\frac{x^9}{x^{13}} = \underline{\hspace{2cm}}$$
 (Type exponential notation with positive exponents.)

5. Simplify. Use positive exponents for any variables.

$$\frac{10r^6}{2r^{-4}}$$

$$\frac{10r^6}{2r^{-4}} = \underline{\hspace{2cm}}$$
 (Type exponential notation with positive exponents.)

6. Simplify. Use positive exponents for any variables.

$$\frac{4x^{-7}x^3}{x^{-4}}$$

$$\frac{4x^{-7}x^3}{x^{-4}} = \underline{\hspace{2cm}}$$

7. Simplify. Use positive exponents for any variables.

$$\frac{4a^{-6}b^5}{20a^2b^{-3}}$$

$$\frac{4a^{-6}b^5}{20a^2b^{-3}} = \underline{\hspace{2cm}}$$

(Use integers or fractions for any numbers in the expression. Type exponential notation with positive exponents.)

8. Simplify. Use positive exponents for any variables. Assume that all bases are not equal to 0.

$$-8x^{-4}$$

$$-8x^{-4} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

9. Simplify. Use positive exponents for any variables.

$$(-5x^2y)(4x^5)(-2xy^4)$$

$$(-5x^2y)(4x^5)(-2xy^4) = \underline{\hspace{2cm}}$$

(Type exponential notation with positive exponents.)

10. Simplify. Use positive exponents for any variables.

$$\frac{6x^{-6}yz^{-7}}{2x^5yz}$$

$$\frac{6x^{-6}yz^{-7}}{2x^5yz} = \underline{\hspace{2cm}}$$

(Simplify your answer. Type exponential notation with positive exponents.)

11. Simplify. Assume that the variable in the exponent represents a nonzero integer and that x is not 0.

$$x^6 \cdot x^{6a}$$

$$x^6 \cdot x^{6a} = \underline{\hspace{2cm}}$$

12. Simplify. Assume that variable in the exponents represents nonzero integer and that x is not 0.

$$\frac{x^{9t-3}}{x^t}$$

$$\frac{x^{9t-3}}{x^t} = \underline{\hspace{2cm}}$$

13. Use the power rule to simplify the expression.

$$(n^4)^3$$

$$(n^4)^3 = \underline{\hspace{2cm}}$$

14. Simplify.

$$(g^{-8})^{-7}$$

$$(g^{-8})^{-7} = \underline{\hspace{2cm}}$$

(Simplify your answer. Type exponential notation using positive exponents.)

15. Simplify.

$$(3^{-1})^3$$

$$(3^{-1})^3 = \underline{\hspace{2cm}} \text{ (Type an integer or a simplified fraction. Use positive exponents only.)}$$

16. Simplify. Write the answer using positive exponents only.

$$(5x^8y^9)^3$$

$$(5x^8y^9)^3 = \underline{\hspace{2cm}}$$

17. Simplify. Write each answer using positive exponents only.

$$(4a^2bc^{-6})^{-3}$$

$$(4a^2bc^{-6})^{-3} = \underline{\hspace{2cm}}$$

18. Simplify.

$$\left(\frac{x^2y^{-7}}{z^{-1}}\right)^{-2}$$

$$\left(\frac{x^2y^{-7}}{z^{-1}}\right)^{-2} = \underline{\hspace{2cm}} \text{ (Use positive exponents only.)}$$

19. Simplify.

$$\left(\frac{4}{5}\right)^{-3}$$

$$\left(\frac{4}{5}\right)^{-3} = \underline{\hspace{2cm}} \text{ (Type an integer or a fraction.)}$$

20. Simplify.

$$\left(\frac{2x^4}{4x^2}\right)^3$$

$$\left(\frac{2x^4}{4x^2}\right)^3 = \underline{\hspace{2cm}}$$

(Type an integer or a simplified fraction. Use positive exponents only.)

21. Simplify.

$$x^7(x^7bc)^{-5}$$

$$x^7(x^7bc)^{-5} = \underline{\hspace{2cm}} \text{ (Use positive exponents only.)}$$

22. Simplify.

$$\frac{2^{-2}x^2y^{-5}}{5^{-2}x^7y^{-1}}$$

$$\frac{2^{-2}x^2y^{-5}}{5^{-2}x^7y^{-1}} = \underline{\hspace{2cm}}$$

(Type the ratio as a simplified fraction. Use positive exponents only.)

23. Simplify the following. Assume that variables in the exponents represent integers and that all other variables are not 0.

$$(x^{3a+7})^2$$

$$(x^{3a+7})^2 = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

24. Simplify the expression.

$$-7x - (6x - 3)$$

$$-7x - (6x - 3) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

1. y^{13}

2. $-2z^3$

3. x^4

4. $\frac{1}{x^4}$

5. $5r^{10}$

6. 4

7. $\frac{b^8}{5a^8}$

8. $-\frac{8}{x^4}$

9. $40x^8y^5$

10. $\frac{3}{x^{11}z^8}$

11. x^{6a+6}

12. x^{8t-3}

13. n^{12}

14. g^{56}

15. $\frac{1}{27}$

$$16. 125x^{24}y^{27}$$

$$17. \frac{c^{18}}{64a^6b^3}$$

$$18. \frac{y^{14}}{x^4z^2}$$

$$19. \frac{125}{64}$$

$$20. \frac{x^6}{8}$$

$$21. \frac{1}{x^{28}b^5c^5}$$

$$22. \frac{25}{4x^5y^4}$$

$$23. x^{6a+14}$$

$$24. -13x+3$$
